

WHAT IS CLAIMED IS:

1                   1.       A method for identifying an agent for treating a diabetic or pre-diabetic  
2 individual, the method comprising the steps of:

3                   (i)       contacting an agent to a mixture comprising a polypeptide encoded by  
4 a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding SEQ ID  
5 NO:2, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:20, SEQ  
6 ID NO:22, SEQ ID NO:28, SEQ ID NO:30, or SEQ ID NO:34; and

7                   (ii)       selecting an agent that modulates the expression or activity of the  
8 polypeptide or that binds to the polypeptide, thereby identifying an agent for treating a  
9 diabetic or pre-diabetic individual.

1                   2.       The method of claim 1, the method further comprising selecting an  
2 agent that modulates insulin sensitivity.

1                   3.       The method of claim 1, wherein step (ii) comprises selecting an agent  
2 that modulates expression of the polypeptide.

1                   4.       The method of claim 1, wherein step (ii) comprises selecting an agent  
2 that modulates the activity of the polypeptide.

1                   5.       The method of claim 1, wherein step (ii) comprises selecting an agent  
2 that specifically binds to the polypeptide.

1                   6.       The method of claim 1, wherein the polypeptide is expressed in a cell  
2 and the cell is contacted with the agent.

1                   7.       The method of claim 1, wherein the polypeptide is SEQ ID NO:2, SEQ  
2 ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:20, SEQ ID NO:22,  
3 SEQ ID NO:28, SEQ ID NO:30, or SEQ ID NO:34.

1                   8.       A method of treating a diabetic or pre-diabetic animal, the method  
2 comprising administering to the animal a therapeutically effective amount of an agent  
3 identified by the method of claim 1.

1                   9.       The method of claim 8, wherein the agent is an antibody.

- 1                   10.    The method of claim 9, wherein the antibody is a monoclonal  
2 antibody.
- 1                   11.    The method of claim 8, wherein the animal is a human.
- 1                   12.    A method of introducing an expression cassette into a cell, the method  
2 comprising,  
3                    introducing into the cell an expression cassette comprising a promoter  
4 operably linked to a polynucleotide encoding a polypeptide, wherein the polynucleotide  
5 hybridizes under stringent conditions to a nucleic acid encoding SEQ ID NO:2, SEQ ID  
6 NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:20, SEQ ID NO:22, SEQ  
7 ID NO:28, SEQ ID NO:30, or SEQ ID NO:34.
- 1                   13.    The method of claim 12, wherein the polypeptide comprises SEQ ID  
2 NO:2, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16, SEQ ID NO:20, SEQ  
3 ID NO:22, SEQ ID NO:28, SEQ ID NO:30, or SEQ ID NO:34.
- 1                   14.    The method of claim 12, wherein the cell is selected from the group  
2 consisting of an adipocyte and a skeletal muscle cell.
- 1                   15.    The method of claim 12, the method further comprising introducing  
2 the cell into a human.
- 1                   16.    The method of claim 15, wherein the human is diabetic.
- 1                   17.    The method of claim 15, wherein the human is prediabetic.
- 1                   18.    The method of claim 15, wherein the cell is from the human.
- 1                   19.    A method of diagnosing an individual who has Type 2 diabetes or is  
2 prediabetic, the method comprising,  
3                    detecting in a sample from the individual the level of a polypeptide or the level  
4 of a polynucleotide encoding the polypeptide, wherein the polynucleotide hybridizes under  
5 stringent conditions to a nucleic acid encoding an amino acid sequence selected from the  
6 group consisting of SEQ ID NO:2, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID  
7 NO:16, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:28, SEQ ID NO:30, and SEQ ID  
8 NO:34;

9                    wherein a modulated level of the polypeptide or polynucleotide in the sample  
10 compared to a level of the polypeptide or polynucleotide in either a lean individual or a  
11 previous sample from the individual indicates that the individual is diabetic or prediabetic.

1                    20.     The method of claim 19, wherein the detecting step comprises  
2 contacting the sample with an antibody that specifically binds to the polypeptide.

1                    21.     The method of claim 19, wherein the amino acid sequence comprises  
2 SEQ ID NO:2, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:16, SEQ ID  
3 NO:20, SEQ ID NO:22, SEQ ID NO:28, SEQ ID NO:30, or SEQ ID NO:34.

1                    22.     The method of claim 19, wherein the detecting step comprises  
2 quantifying mRNA encoding the polypeptide.

1                    23.     The method of claim 22, wherein the mRNA is reverse transcribed and  
2 amplified in a polymerase chain reaction.

1                    24.     The method of claim 19, wherein the sample is a blood, urine or tissue  
2 sample.

1                    25.     An isolated nucleic acid encoding a polypeptide comprising the amino  
2 acid sequence of SEQ ID NO:10 or SEQ ID NO:28.

1                    26.     The isolated nucleic acid of claim 25, wherein the nucleic acid  
2 comprises the sequence set forth in SEQ ID NO:9 or SEQ ID NO:27.

1                    27.     An expression cassette comprising the isolated nucleic acid of claim  
2 25.

1                    28.     A host cell comprising the expression cassette of claim 27.